Rohit Karnik

List of Publications by Citations

90 papers	9,099 citations	44 h-index	95 g-index
96 ext. papers	10,282 ext. citations	11.4 avg, IF	6.13 L-index

#	Paper	IF	Citations
90	Microfluidic platform for controlled synthesis of polymeric nanoparticles. *Nano Letters*, **2008**, 8, 2906-12	11.5	616
89	Selective ionic transport through tunable subnanometer pores in single-layer graphene membranes. *Nano Letters*, **2014**, 14, 1234-41	11.5	569
88	Electrostatic control of ions and molecules in nanofluidic transistors. *Nano Letters*, **2005**, 5, 943-8	11.5	508
87	Engineering of self-assembled nanoparticle platform for precisely controlled combination drug therapy. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 17939-44	11.5	492
86	Rectification of ionic current in a nanofluidic diode. *Nano Letters*, **2007**, 7, 547-51	11.5	419
85	Fundamental transport mechanisms, fabrication and potential applications of nanoporous atomically thin membranes. *Nature Nanotechnology*, **2017**, 12, 509-522	28.7	408
84	Mechanistic understanding of in vivo protein corona formation on polymeric nanoparticles and impact on pharmacokinetics. *Nature Communications*, **2017**, 8, 777	17.4	362
83	Transepithelial transport of Fc-targeted nanoparticles by the neonatal fc receptor for oral delivery. *Science Translational Medicine*, **2013**, 5, 213ra167	17.5	286
82	Selective molecular transport through intrinsic defects in a single layer of CVD graphene. *ACS Nano*, **2012**, 6, 10130-8	16.7	285
81	DNA translocation in inorganic nanotubes. *Nano Letters*, **2005**, 5, 1633-7	11.5	277
80	Single-step assembly of homogenous lipid-polymeric and lipid-quantum dot nanoparticles enabled by microfluidic rapid mixing. *ACS Nano*, **2010**, 4, 1671-9	16.7	248
79	Nanofiltration across Defect-Sealed Nanoporous Monolayer Graphene. *Nano Letters*, **2015**, 15, 3254-60	11.5	229
78	Bioinspired multivalent DNA network for capture and release of cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 19626-31	11.5	228
77	Mechanisms of molecular permeation through nanoporous graphene membranes. *Langmuir*, **2014**, 30, 675-82	4	197
76	Microfluidic platform for combinatorial synthesis and optimization of targeted nanoparticles for cancer therapy. *ACS Nano*, **2013**, 7, 10671-80	16.7	171
75	Synthesis of size-tunable polymeric nanoparticles enabled by 3D hydrodynamic flow focusing in single-layer microchannels. *Advanced Materials*, **2011**, 23, H79-83	24	169
74	Cell-surface sensors for real-time probing of cellular environments. *Nature Nanotechnology*, **2011**, 6, 524-31	28.7	167

73	Ultra-high throughput synthesis of nanoparticles with homogeneous size distribution using a coaxial turbulent jet mixer. *ACS Nano*, **2014**, 8, 6056-65	16.7	163
72	Heterogeneous sub-continuum ionic transport in statistically isolated graphene nanopores. *Nature Nanotechnology*, **2015**, 10, 1053-7	28.7	158
71	Engineered cell homing. *Blood*, **2011**, 118, e184-91	2.2	158
70	Effects of biological reactions and modifications on conductance of nanofluidic channels. *Nano Letters*, **2005**, 5, 1638-42	11.5	158
69	Implications of permeation through intrinsic defects in graphene on the design of defect-tolerant membranes for gas separation. *ACS Nano*, **2014**, 8, 841-9	16.7	155
68	Effects of ligands with different water solubilities on self-assembly and properties of targeted nanoparticles. *Biomaterials*, **2011**, 32, 6226-33	15.6	151
67	Field-effect control of protein transport in a nanofluidic transistor circuit. *Applied Physics Letters*, **2006**, 88, 123114	3.4	147
66	Nanofluidic transport governed by the liquid/vapour interface. *Nature Nanotechnology*, **2014**, 9, 317-23	28.7	127
65	Parallel microfluidic synthesis of size-tunable polymeric nanoparticles using 3D flow focusing towards in vivo study. *Nanomedicine: Nanotechnology, Biology, and Medicine*, **2014**, 10, 401-9	6	117
64	Engineered mesenchymal stem cells with self-assembled vesicles for systemic cell targeting. *Biomaterials*, **2010**, 31, 5266-74	15.6	103
63	Harnessing the hygroscopic and biofluorescent behaviors of genetically tractable microbial cells to design biohybrid wearables. *Science Advances*, **2017**, 3, e1601984	14.3	99
62	Mixing crowded biological solutions in milliseconds. *Analytical Chemistry*, **2005**, 77, 7618-25	7.8	99
61	Polymeric Nanoparticles Amenable to Simultaneous Installation of Exterior Targeting and Interior Therapeutic Proteins. *Angewandte Chemie - International Edition*, **2016**, 55, 3309-12	16.4	94
60	Evaporation-induced cavitation in nanofluidic channels. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 3688-93	11.5	92
59	Chemical engineering of mesenchymal stem cells to induce a cell rolling response. *Bioconjugate Chemistry*, **2008**, 19, 2105-9	6.3	90
58	Nanoporous Atomically Thin Graphene Membranes for Desalting and Dialysis Applications. *Advanced Materials*, **2017**, 29, 1700277	24	85
57	Molecular Sieving Across Centimeter-Scale Single-Layer Nanoporous Graphene Membranes. *ACS Nano*, **2017**, 11, 5726-5736	16.7	82
56	Microstructured barbs on the North American porcupine quill enable easy tissue penetration and difficult removal. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 21289-94	11.5	78

55	Diffusion-limited patterning of molecules in nanofluidic channels. *Nano Letters*, **2006**, 6, 1735-40	11.5	67
54	Water and Solute Transport Governed by Tunable Pore Size Distributions in Nanoporous Graphene Membranes. *ACS Nano*, **2017**, 11, 10042-10052	16.7	65
53	Cell sorting by deterministic cell rolling. *Lab on A Chip*, **2012**, 12, 1427-30	7.2	63
52	Effects of annealing on copper substrate surface morphology and graphene growth by chemical vapor deposition. *Carbon*, **2015**, 94, 369-377	10.4	55
51	Single-Layer Graphene Membranes Withstand Ultrahigh Applied Pressure. *Nano Letters*, **2017**, 17, 3081-3088	11.5	54
50	Water filtration using plant xylem. *PLoS ONE*, **2014**, 9, e89934	3.7	52
49	Nanomechanical control of cell rolling in two dimensions through surface patterning of receptors. *Nano Letters*, **2008**, 8, 1153-8	11.5	47
48	High permeability sub-nanometre sieve composite MoS membranes. *Nature Communications*, **2020**, 11, 2747	17.4	44
47	A Scalable Route to Nanoporous Large-Area Atomically Thin Graphene Membranes by Roll-to-Roll Chemical Vapor Deposition and Polymer Support Casting. *ACS Applied Materials & Interfaces*, **2018**, 10, 10369-10378	9.5	44
46	A mechanical-electrokinetic battery using a nano-porous membrane. *Journal of Micromechanics and Microengineering*, **2006**, 16, 667-675	2	44
45	Integration of solid-state nanopores in microfluidic networks via transfer printing of suspended membranes. *Analytical Chemistry*, **2013**, 85, 3871-8	7.8	38
44	Mimicking the inflammatory cell adhesion cascade by nucleic acid aptamer programmed cell-cell interactions. *FASEB Journal*, **2011**, 25, 3045-56	0.9	38
43	Selective Nanoscale Mass Transport across Atomically Thin Single Crystalline Graphene Membranes. *Advanced Materials*, **2017**, 29, 1605896	24	37
42	Facile Fabrication of Large-Area Atomically Thin Membranes by Direct Synthesis of Graphene with Nanoscale Porosity. *Advanced Materials*, **2018**, 30, e1804977	24	35
41	Monolayer graphene transfer onto polypropylene and polyvinylidenedifluoride microfiltration membranes for water desalination. *Desalination*, **2016**, 388, 29-37	10.3	34
40	Desalination of water by vapor-phase transport through hydrophobic nanopores. *Journal of Applied Physics*, **2010**, 108, 044315	2.5	32
39	Molecular size-dependent subcontinuum solvent permeation and ultrafast nanofiltration across nanoporous graphene membranes. *Nature Nanotechnology*, **2021**, 16, 989-995	28.7	31
38	Assessment and control of the impermeability of graphene for atomically thin membranes and barriers. *Nanoscale*, **2017**, 9, 8496-8507	7.7	29

37	Isolation of Circulating Plasma Cells in Multiple Myeloma Using CD138 Antibody-Based Capture in a Microfluidic Device. *Scientific Reports*, **2017**, 7, 45681	4.9	26
36	Design of Insulin-Loaded Nanoparticles Enabled by Multistep Control of Nanoprecipitation and Zinc Chelation. *ACS Applied Materials & Interfaces*, **2017**, 9, 11440-11450	9.5	25
35	A cell rolling cytometer reveals the correlation between mesenchymal stem cell dynamic adhesion and differentiation state. *Lab on A Chip*, **2014**, 14, 161-6	7.2	25
34	Knudsen effusion through polymer-coated three-layer porous graphene membranes. *Nanotechnology*, **2017**, 28, 184003	3.4	23
33	Solid-Phase Extraction, Preservation, Storage, Transport, and Analysis of Trace Contaminants for Water Quality Monitoring of Heavy Metals. *Environmental Science & Technology*, **2020**, 54, 2646-2657	10.3	20
32	Enhanced discrimination of DNA molecules in nanofluidic channels through multiple measurements. *Lab on A Chip*, **2012**, 12, 1094-101	7.2	20
31	A semianalytical model to study the effect of cortical tension on cell rolling. *Biophysical Journal*, **2010**, 99, 3870-9	2.9	20
30	Highly porous nanofiber-supported monolayer graphene membranes for ultrafast organic solvent nanofiltration. *Science Advances*, **2021**, 7, eabg6263	14.3	19
29	Examining the lateral displacement of HL60 cells rolling on asymmetric P-selectin patterns. *Langmuir*, **2011**, 27, 240-9	4	18
28	Spontaneous formation of heterogeneous patches on polymer-lipid core-shell particle surfaces during self-assembly. *Small*, **2013**, 9, 511-7	11	15
27	Self-sorting of deformable particles in an asynchronous logic microfluidic circuit. *Small*, **2013**, 9, 375-81	11	13
26	Investigating the translocation of lambda-DNA molecules through PDMS nanopores. *Analytical and Bioanalytical Chemistry*, **2009**, 394, 437-46	4.4	13
25	In-field determination of soil ion content using a handheld device and screen-printed solid-state ion-selective electrodes. *PLoS ONE*, **2018**, 13, e0203862	3.7	12
24	Enhanced water transport and salt rejection through hydrophobic zeolite pores. *Nanotechnology*, **2017**, 28, 505703	3.4	9
23	Drug loading augmentation in polymeric nanoparticles using a coaxial turbulent jet mixer: Yong investigator perspective. *Journal of Colloid and Interface Science*, **2019**, 538, 45-50	9.3	8
22	Engineering and characterization of gymnosperm sapwood toward enabling the design of water filtration devices. *Nature Communications*, **2021**, 12, 1871	17.4	7
21	Polymeric Nanoparticles Amenable to Simultaneous Installation of Exterior Targeting and Interior Therapeutic Proteins. *Angewandte Chemie*, **2016**, 128, 3370-3373	3.6	5
20	MICROFLUIDICS: Synthesis of Size-Tunable Polymeric Nanoparticles Enabled by 3D Hydrodynamic Flow Focusing in Single-Layer Microchannels (Adv. Mater. 12/2011). *Advanced Materials*, **2011**, 23, H78-H78	24	5

19	Monolayer graphene membranes for molecular separation in high-temperature harsh organic solvents. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	5
18	Microfluidic multiplexing of solid-state nanopores. *Journal of Physics Condensed Matter*, **2017**, 29, 484001	1.8	4
17	Time limitations and geometrical parameters in the design of microfluidic comparators. *Microfluidics and Nanofluidics*, **2014**, 17, 359-373	2.8	4
16	A Comprehensive Review on Biofuels from Oil Palm Empty Bunch (EFB): Current Status, Potential, Barriers and Way Forward. *Sustainability*, **2021**, 13, 10210	3.6	4
15	Role of electrostatic interactions in protein loading in PLGA-PEG nanoparticles **2014**,		3
14	Fieldwork-based determination of design priorities for point-of-use drinking water quality sensors for use in resource-limited environments. *PLoS ONE*, **2020**, 15, e0228140	3.7	2
13	Nonlinear ion transport mediated by induced charge in ultrathin nanoporous membranes. *Physical Review E*, **2021**, 104, 044802	2.4	2
12	Oscillations in light-triggered logic microfluidic circuit. *Microsystem Technologies*, **2014**, 20, 437-444	1.7	1
11	Molecular self-assembly Enables Tuning of Nanopores in Atomically Thin Graphene Membranes for Highly Selective Transport.. *Advanced Materials*, **2022**, e2108940	24	1
10	Thermodynamic analysis and material design to enhance chemo-mechanical coupling in hydrogels for energy harvesting from salinity gradients. *Journal of Applied Physics*, **2020**, 128, 044701	2.5	1
9	Rapid screening of nanopore candidates in nanoporous single-layer graphene for selective separations using molecular visualization and interatomic potentials. *Journal of Chemical Physics*, **2021**, 154, 184111	3.9	1
8	Antibody-modified conduits for highly selective cytokine elimination from blood. *JCI Insight*, **2018**, 3,	9.9	1
7	Nanoporous Graphene: Facile Fabrication of Large-Area Atomically Thin Membranes by Direct Synthesis of Graphene with Nanoscale Porosity (Adv. Mater. 49/2018). *Advanced Materials*, **2018**, 30, 1870376	24	1
6	A Micro/Nano Engineering Laboratory Module on Superoleophobic Membranes for Oil-Water Separation. *MRS Advances*, **2017**, 2, 1699-1706	0.7	
5	Iron oxide xerogels for improved water quality monitoring of arsenic(III) in resource-limited environments solid-phase extraction, preservation, storage, transportation, and analysis of trace contaminants (SEPSTAT). *Analytical Methods*, **2021**, 13, 2165-2174	3.2	
4	Fieldwork-based determination of design priorities for point-of-use drinking water quality sensors for use in resource-limited environments **2020**, 15, e0228140		
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1 Fieldwork-based determination of design priorities for point-of-use drinking water quality sensors for use in resource-limited environments **2020**, 15, e0228140